

Notice of Allowability

Application No.

09/981,508

Examiner

Wesley A. Nicolas

Applicant(s)

ZHENG ET AL.

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment dated 10/30/03.
2. ☒ The allowed claim(s) is/are 33,35-41,43-46 and 48-63.
3. ☒ The drawings filed on 16 October 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6 <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No. <u>11242003</u> . |
| 3 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No. <u>11032003</u> | 7 <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

DETAILED ACTION - Examiner's Amendment

This is in response to the Amendment submitted October 30, 2003. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 33, 35-41, 43-46, and 48-63 are currently pending in this application.

Election/Restriction

1. Applicant's cancellation of non-elected claims has been noted. Applicant may re-file said claims in a divisional application.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on October 30, 2003 (with an OIPE stamp of 11/03/2003) was filed after the mailing date of the First Office action on July 30, 2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

3. The objection to the abstract as set forth in the previous Office action has been **withdrawn** in view of the new abstract submitted by Applicant on October 30, 2003.

Claim Objections

4. The objections to the claims as set forth in the previous Office action has been **withdrawn** in view of the amendment submitted by Applicant on October 30, 2003.

Claim Rejections - 35 USC § 102

5. The 35 U.S.C. § 102 rejections as set forth in the previous Office action have been **withdrawn** in view of the amendment submitted by Applicant on October 30, 2003.

Examiner's Amendment

6. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with N. Alexander Nolte on November 24, 2003.

7. The application has been amended as follows:

In the claims:

Claim 46, line 7, "8" (2nd instance, after "50") has been deleted.

Claim 55, line 3, "cubic" (1st instance) has been deleted, and --squared-- has been added after "centimeter" (1st instance).

Claim 55, line 3, "cubic" (2nd instance) has been deleted, and --squared-- has been added after "centimeter" (2nd instance).

Claim 56, line 3, "cubic" (1st instance) has been deleted, and --squared-- has been added after "centimeter" (1st instance).

Claim 56, line 3, line 3, "cubic" (2nd instance) has been deleted, and --squared-- has been added after "centimeter" (2nd instance).

Allowable Subject Matter

8. Claims 33, 35-41, 43-46, and 48-63 are allowed over the prior art of record.

9. The following is an examiner's statement of reasons for allowance:

Regarding claims 33 and 46, the specific method of electroplating metal which includes application of a varying amplitude waveform comprising a series of alternating large magnitude voltage pulses and small magnitude voltage pulses, the large magnitude voltage pulses being configured to generate a current density on the wafer between about 8 mA/cm² and about 50 mA/cm² was not taught or suggested by the prior art of record.

Regarding claim 59, the specific method for electroplating which includes an interchanging cathodic series of large magnitude and small magnitude pulses, the large magnitude pulses generating a current density of between about 8 mA/cm² and about 50 mA/cm² was not taught or suggested by the prior art of record.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley Nicolas whose telephone number is (703)305-0082. The examiner can normally be reached on Mon.-Thurs. from 7am to 5pm.

The Supervisory Primary Examiner for this Art Unit is Roy King whose telephone number is (703) 308-1146.

The fax number for this Group is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.


WESLEY A. NICOLAS
PATENT EXAMINER

November 25, 2003